



SXT Requirements and Image Resolution Error Budget

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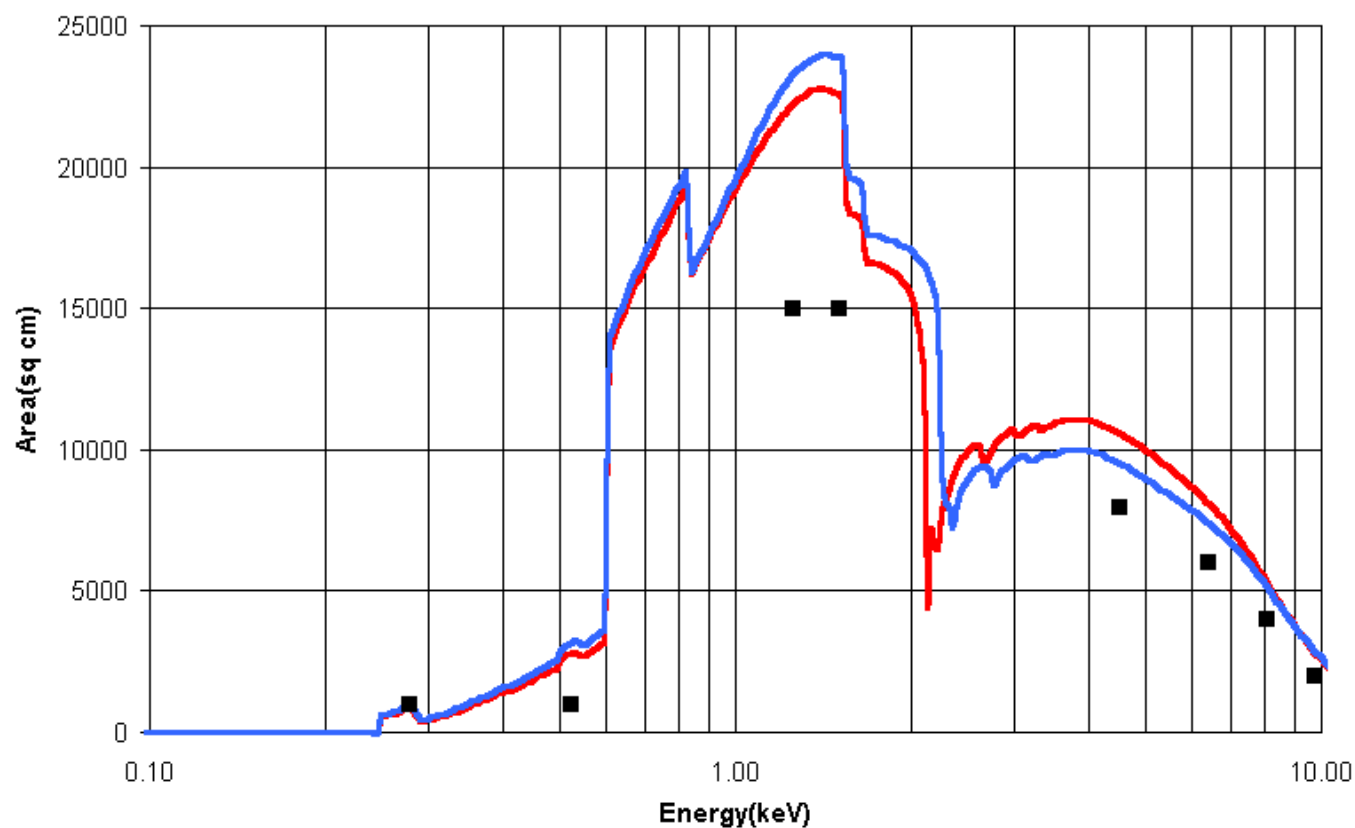


SXT Requirements

- **Mission Effective Area (thru instruments):**
 - 1000 cm² minimum across band 0.25 to 10.0 KeV
 - 15,000 cm² at 1.25 KeV
 - 6,000 cm² at 6.0 KeV
- **Energy Resolution:**
 - 300 minimum across 0.25 to 10.0 KeV band
 - 3000 from 6.0 to 10.0 KeV
- **Image resolution:**
 - 15 arcsec HPD (5 arcsec goal)
- **Physical Characteristics:**
 - Mass: 757 kgm max
 - Envelope: 1600 mm diameter x 2060 mm long
 - Including space for pre and post-collimator and reflection gratings
 - Power: TBD watts



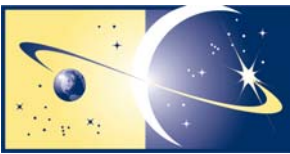
SXT Effective Area



Mission Effective Area Requirements and Area Predictions for Candidate SXT Configurations

■ Mission Flowdown Requirement
— 226 Shell, 200mm segments, Pt
— 120 Shell, 450mm segments, Au

Area where
 $R > 300$,
(thru typical Instruments)



SXT Image Error Budget - Requirement

SXT/Calorimeter Image Error Budget - Requirements							
ITEM (HPD - arcsec)	RQMT	Margin	Budget Value				
On-orbit Image Resolution	15.00	7.16	13.18				
Detector pixelization error (5 arcsec pixels)				4.08			
On-Orbit Telescope				12.53			
Telescope error effects					5.74		
SXT/Telescope mounting strain						1.00	
SXT/Sl focal plane drift (over obs)						1.00	
Image Reconstruction errors						5.00	
SXT/Sl vibration effects						2.00	
SXT/Sl misalignment (off-axis error)						1.00	
SXT/Sl Focus Error						1.00	
SXT Optics - On-orbit performance	13.00	6.71			11.14		
SXT Mirror launch shifts						2.00	
SXT thermally induced errors (ΔT driven)						3.61	
Housing/glass CTE mismatch							3.00
Epoxy/glass bi-layer effects							2.00
Long term material stability effects						1.00	
SXT Mirror, As-built	12.00	6.16				10.30	
Assembly (bonding) strain							3.00
Alignment Errors (Using CDA)							3.00
Optical Elements	10.00	3.46					9.38
Mandrel Figure Errors							4.00
Forming Errors							6.00
Replication Errors							6.00
	Allocation		RSS		Rqmt		Margin